In the Claims:

1. – 2. (Canceled).

3. (Currently Amended). ~~The~~ A method ~~of claim 2,~~ for providing a bitwise restraint, the method comprising:

providing a language structure for expressing the bitwise constraint, said language structure including at least one constraint parameter and at least one operator, said constraint parameter being further constrained to an interval containing at least one value, said interval having interval limits;

propagating information bi-directionally to determine interval limits for said constraint parameters at least partially according to the bitwise constraint;

computing one or more permissible values for the constraint parameter;

generating a single test value for the constraint parameter; and

wherein said bi-directional propagation is at least partially performed by indicating bits having one or zero value according to a maximum of said interval;

wherein said interval is representable as an arithmetic range and as a bitwise representation.

4. (Original) The method of claim 3, wherein providing said language structure further comprises providing a computational structure for representing said interval as said arithmetic range and as said bitwise representation in parallel, for propagating information to determine said interval limits.

5.   (Original) The method of claim 4, wherein said language structure comprises a plurality of constraint parameters and wherein said computational structure is provided for reducing at least a portion of said plurality of constraint parameters

wherein the reducing comprises computing a new set of values for a first constraint parameter and propagating the new set of values to at least one other constraint parameter.

6.   (Currently Amended). ~~The~~ A method ~~of claim 5,~~ for providing a bitwise restraint, the method comprising:

providing a language structure for expressing the bitwise constraint, said language structure including at least one constraint parameter and at least one operator, said constraint parameter being further constrained to an interval containing at least one value, said interval having interval limits;

propagating information bi-directionally to determine interval limits for said constraint parameters at least partially according to the bitwise constraint;

computing one or more permissible values for the constraint parameter;

generating a single test value for the constraint parameter;

wherein said interval is representable as an arithmetic range and as a bitwise representation;

wherein providing said language structure further comprises providing a computational structure for representing said interval as said arithmetic range and as said bitwise representation in parallel, for propagating information to determine said interval limits;

wherein said language structure comprises a plurality of constraint parameters and wherein said computational structure is provided for reducing at least a portion of said plurality of constraint parameters;

wherein the reducing comprises computing a new set of values for a first constraint parameter and propagating the new set of values to at least one other constraint parameter;

wherein said computational structure comprises a range list representation which includes an arithmetic range and a bitwise representation, wherein reducing at least a portion of said plurality of constraint parameters is performed by:

computing a first range in a first range list for at least a first constraint parameter;

computing one or more ranges in a second range list for at least a second constraint parameter; and

intersecting said first range list with said second range list to reduce said first and second constraint parameters.

7.   (Original). The method of claim 6, wherein generating said test value is performed by:

determining a number of solutons for each interval;

selecting an interval randomly according to a weight to form a selected

interval; and

selecting a point within said selected interval.

8.   (Original). The method of claim 6, wherein said bitwise representation is provided by translating said intervals with a vector of a plurality of state values, each state value corresponding to one bit of said test value.

9.   (Original). The method of claim 8, wherein said plurality of state values is four state values, each corresponding to a possible state of said bit, each state value being one of zero, one, zero or one, or a non-legal value.

10.   (Original). The method of claim 3, wherein the bitwise constraint is derived from a constraint featuring an operator through propagation of bitwise information.

11.   (Canceled).

12.   (Currently Amended). The method of claim ~~11~~ 3, wherein said bi-directional propagation is at least partially performed by correcting at least one interval limit.

13.   (Original). The method of claim 12, wherein said bi-directional propagation is at least partially performed by removing an invalid interval.

14.   (Original). The method of claim 13, wherein said test value for said constraint parameter is generated at least partially by selecting a particular interval.

15.   (Original). The method of claim 14, wherein said particular interval is selected at least partially by weight of said interval.

16. (Original). The method of claim 15, wherein said test value is selected from said particular interval.

17. – 23. (Canceled).